



# ***3<sup>d</sup> Weather Squadron***

*Integrity - Service - Excellence*

## **FORECAST PERFORMANCE METRICS**



**RGAAF Weather Station  
April 2015**



# Overview

- Monthly Weather Summary
- How do we measure our performance?
- Verification Statistics
- Flight Weather Briefings
- Weather Warnings



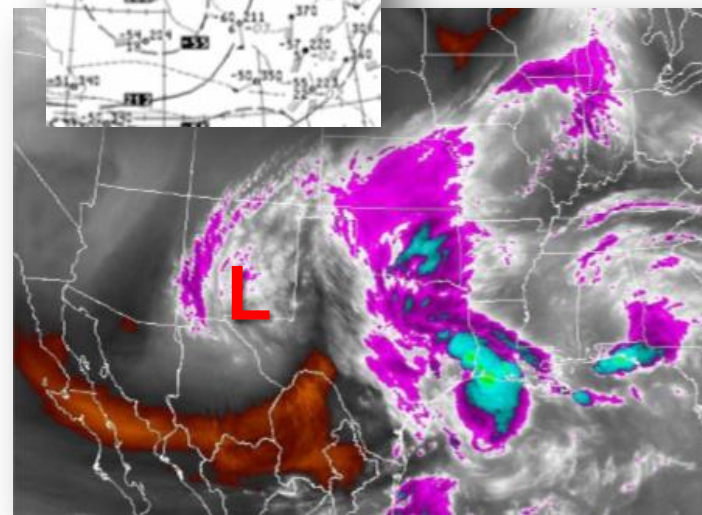
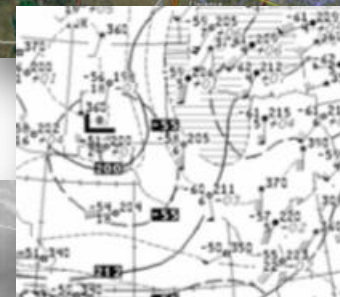
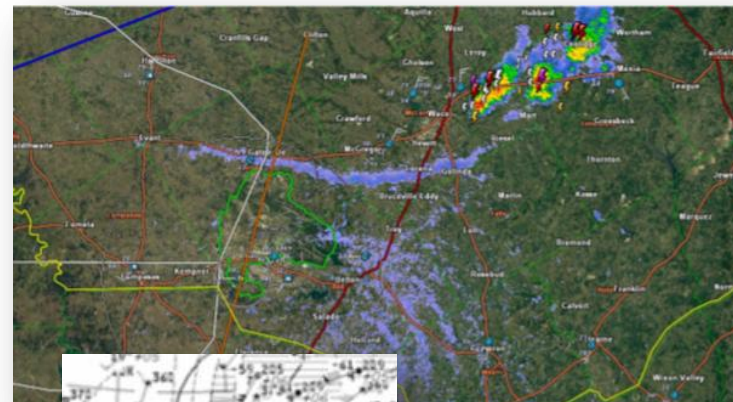


# April 2015 Weather Summary

Typical Spring pattern--series of strong cold fronts brought severe thunderstorms along with brief shots of cool weather. Strong/severe storms struck on the 23rd and 27th with wind gusts to 50 mph and pea-size hail. Average daily max temperature was 77 F--3 degrees below normal; daily min temperature was 59 F--one degree above normal.

Monthly rainfall was hit and miss due to the scattered thunderstorms. On the 4<sup>th</sup>, a thunderstorm grazed RGAAF with only .04 inches of rain, but dumped nearly an inch at HAAF. Despite 9 days with more than a trace of rainfall recorded, we ended the month with a total of just 2.38 inches--short of the monthly average of 2.60 inches. We're still 2 inches short for this point of the year.

May is our wettest month of the year...





# How well are we forecasting mission impacting weather?

- Best measure of our performance is direct feedback from aircrews and other operators
  - Click on “Feedback Icon” on our flimsy; send an E-mail
  - Complete Flight Weather Briefing Feedback Form on our webpage or faxed with all DD175-1s
  - Call RGAAF weather station Flight Chief at 288-9166
- Please provide mission specifics:
  - Was weather forecast for your mission Go or No Go?
  - Was actual weather for your mission Go or No Go?
  - Was your mission altered or cancelled due to weather?
- We'll take good and bad comments!



How are we doing?  
Your feedback is important to us!

Please circle the appropriate response, provide mission specifics, and enter any additional comments in Remarks.

1. Weather Forecast for your mission was: GO NO GO  
2. Actual weather for your mission was: GO NO GO  
3. Was your mission altered or cancelled due to weather: YES NO  
4. Mission Details:  
Aircraft Type: \_\_\_\_\_ Call Sign/Tail # \_\_\_\_\_ Type Rating: \_\_\_\_\_ Brief/Date/Time: \_\_\_\_\_  
Remarks: \_\_\_\_\_  
\_\_\_\_\_

Please fax this form to the Weather Operations Center (RGAAF) Weather Station at DOW 7100 Corner 210 288-1100 or send an E-mail to the Flight Chief: [station.and@ndmcc.com](mailto:station.and@ndmcc.com)



# Aircrew Feedback

---

- **0** Feedback Forms / E-mails in **April**

**We Need feedback!!!**

**Forecasters...don't forget to pass along the feedback forms...solicit feedback during re-briefs!**





# PIREPs

- We received “4” PIREPs...passed by ATC

**Please call us!**  
**“Gray METRO - UHF 306.5**  
**Help the next aircrew/mission!**





# Objective Method

- In addition to direct feedback we employ an objective method to measure (verify) our forecast performance:
  - We selected three key operational parameters:
    - Ceiling / Visibility < 1000 feet / 3 miles (**IFR**)
    - Ceiling / Visibility < 500 feet / 1/2 mile (**HLR Airfield Minimums**)
    - Thunderstorms (**Lightning Warning issued for Fort Hood**)
  - We measure the accuracy of each Fort Hood Reservation Forecast (Flimsy) published on the 3 WS web page
  - We use weather observations at GRK, HLR, GOP (Gatesville), and any PIREPs to verify each Flimsy at the 3-, 6-, and 12- hour point from the original issuance time

The image shows a screenshot of a complex weather forecast form titled "AF WEATHER SQUADRON - FORT HOOD MISSION PLANNING / EXECUTION FORECAST". The form is divided into several sections, including "METAR", "TAF", and various forecast data tables. It contains a lot of numerical data and text, likely representing weather observations and forecasts for Fort Hood. The form is organized into columns and rows, with some sections highlighted in green and yellow. The text is small and dense, typical of a technical document or form.



# Did the Forecast or Weather Impact the Mission?

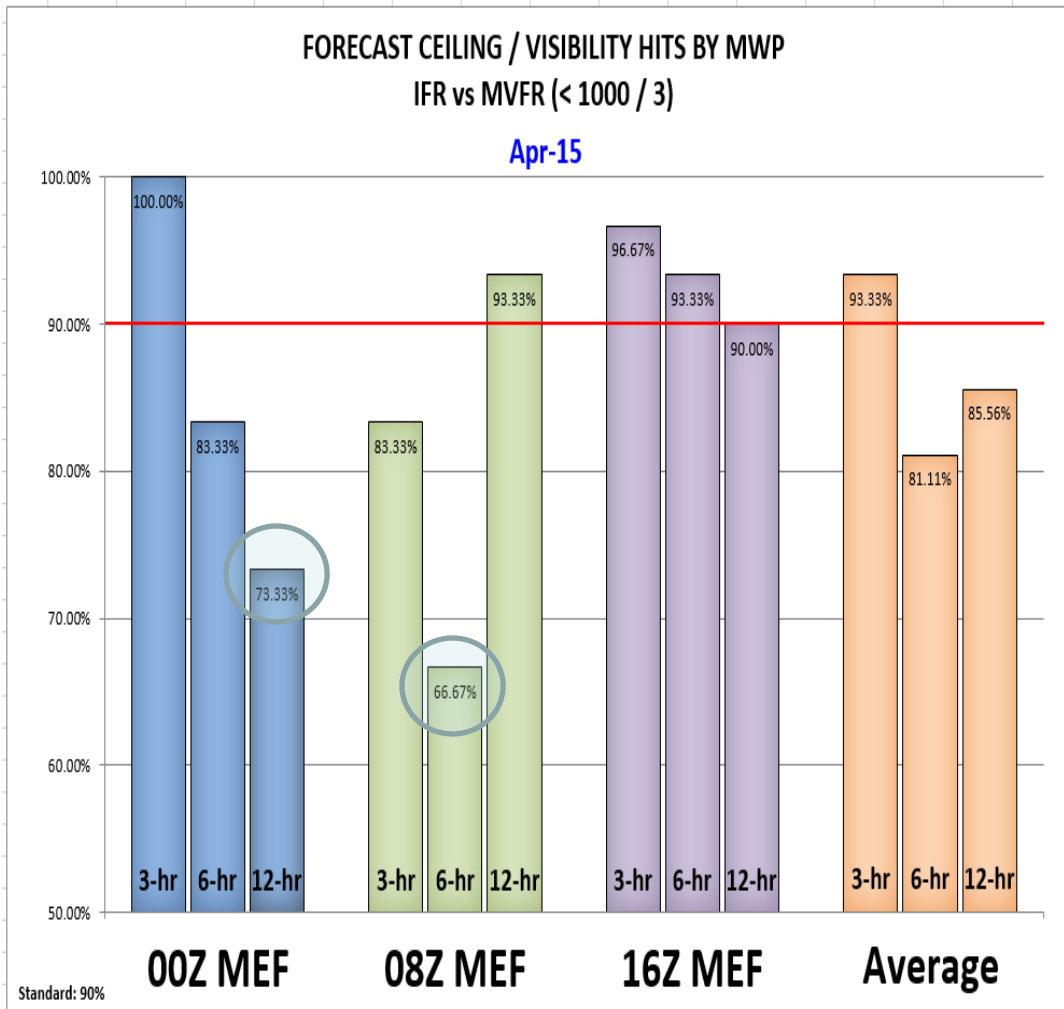
---

- Did we forecast “GO” weather for your mission and weather was “GO”--mission completed
- Did we forecast “GO” weather for your mission and weather was “NO GO”--mission cancelled or changed due to un-forecast weather
- Did we forecast “NO GO” weather for your mission and weather was “GO”--mission cancelled or changed due to forecast (*lost opportunity or needless change*)
- Did we forecast “NO GO” weather for your mission and weather was “NO GO”--mission cancelled or changed due to forecast/weather (*if inserted early in planning process this situation can prevent wasted time and enhance overall planning process*)





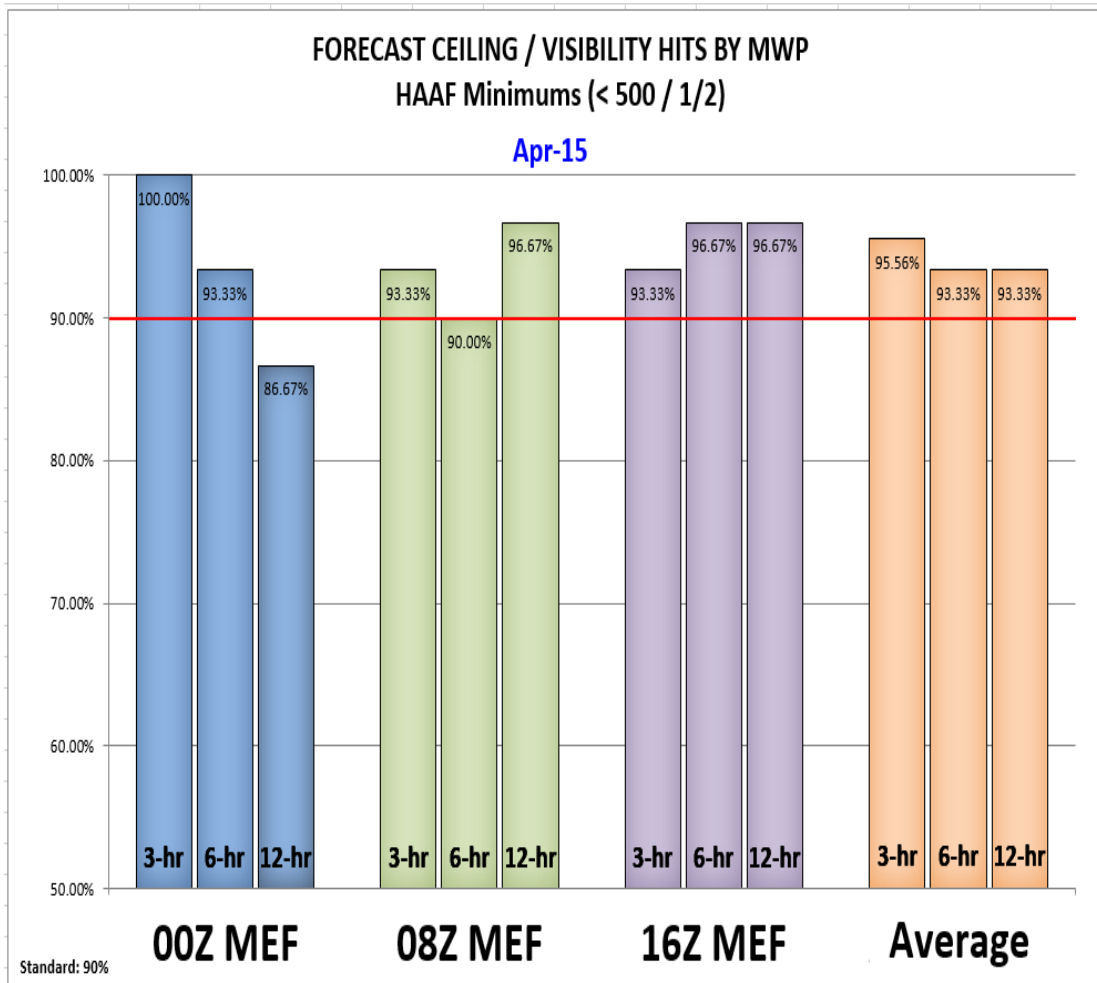
# April 2015 IFR vs VFR



- 00Z MEF--overall good job here--correctly forecasted actual IFR conditions next morning (12-hours out) 77% of the time (10/13); 5 false alarms
- 08Z MEF--Correctly forecasted actual IFR 73% of the time 3 hours out, but just 20% 6 hours out...8 times we told aircrews the wx for their mission was a "Go" by 0900L, but it weather was actually a "NoGo"—we forecasted improving conditions too early



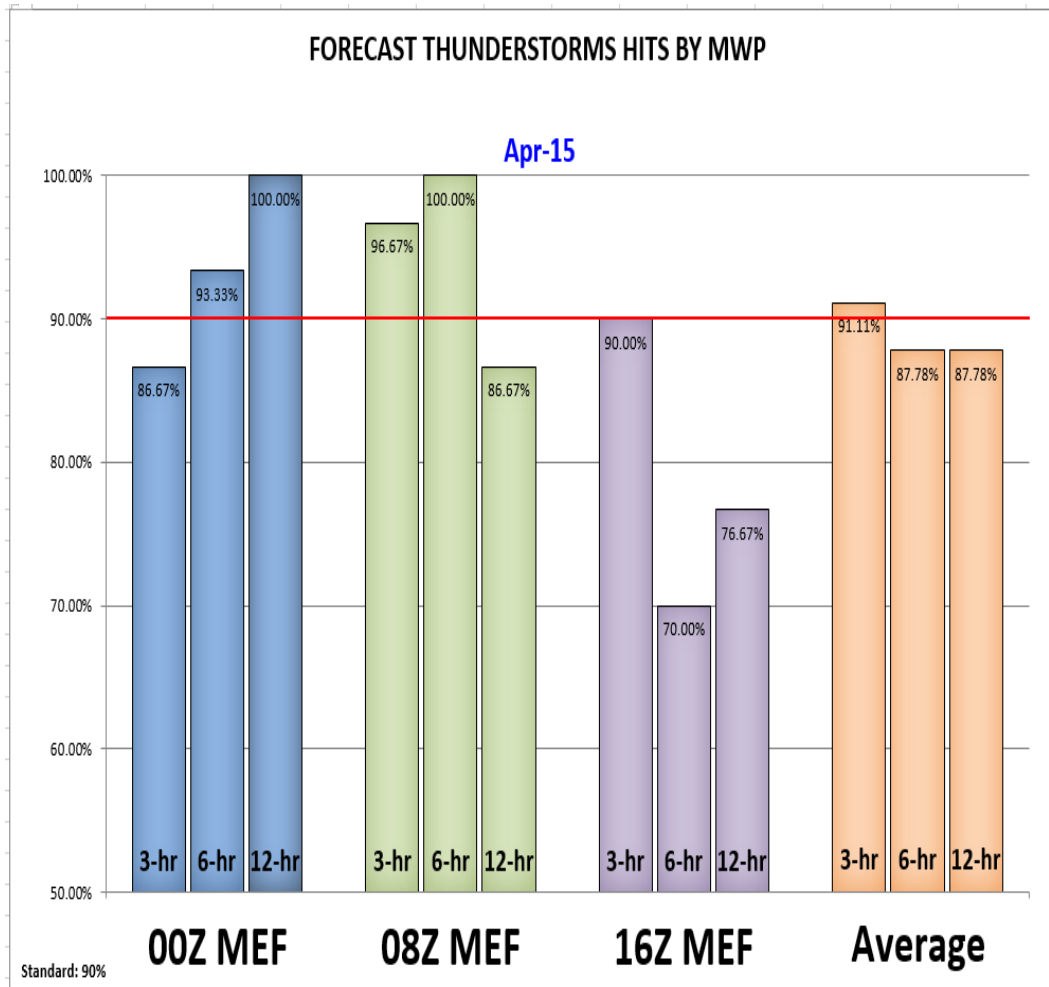
# April 2015 HAAF Minimum



- Forecasters do generally well forecasting IFR, but struggle forecasting LIFR beyond the short-term (3-hours)
- A few rare/prolonged low stratus/fog events challenged the forecaster



# April 2015 Thunderstorms

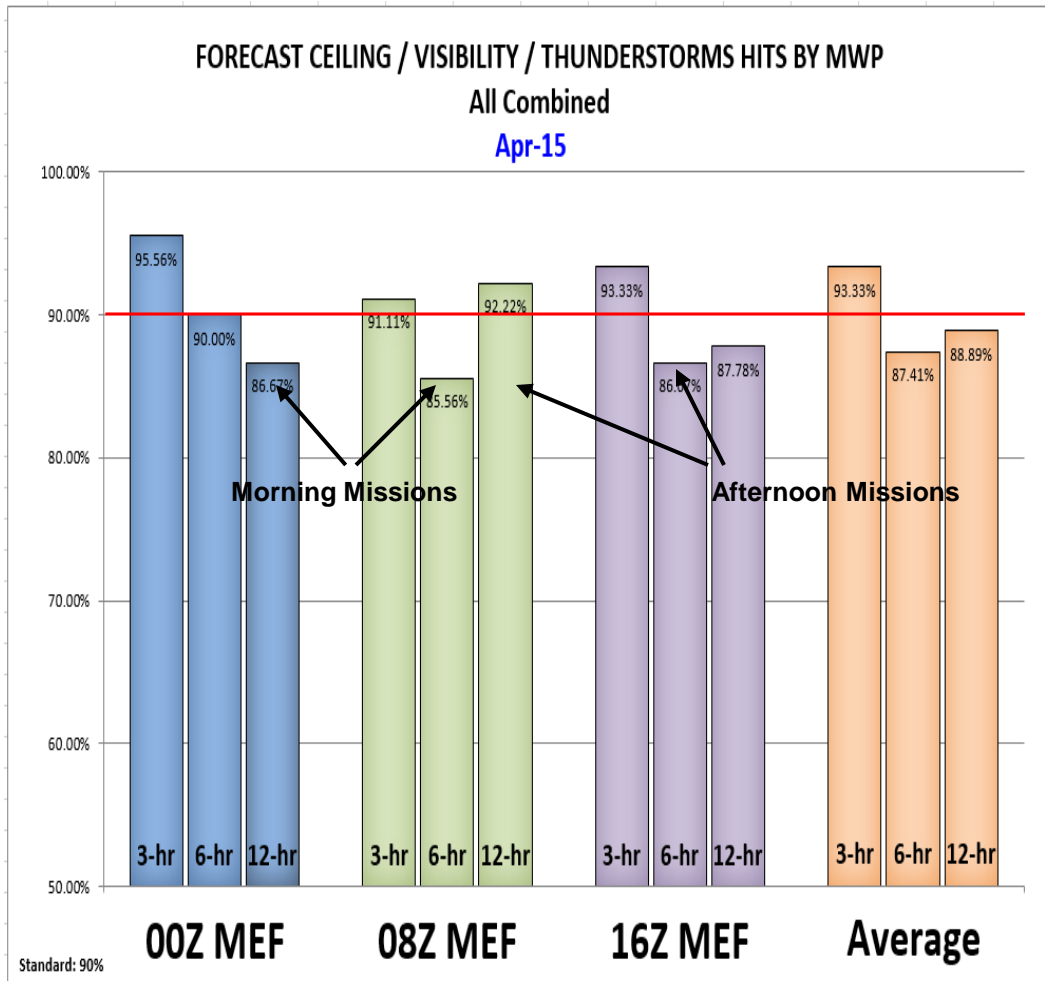


- *Thunderstorms on Fort Hood and subsequent Lightning Warnings have a larger impact during Summer months while low ceilings/visibilities occur more during Winter*
- Over-forecasted—many false alarms
- Correctly forecasted actual TS events 67% of the time 16Z MEF
- Though forecasts were not bad, we too often forecasted thunderstorms too soon in the afternoon



# April 2015

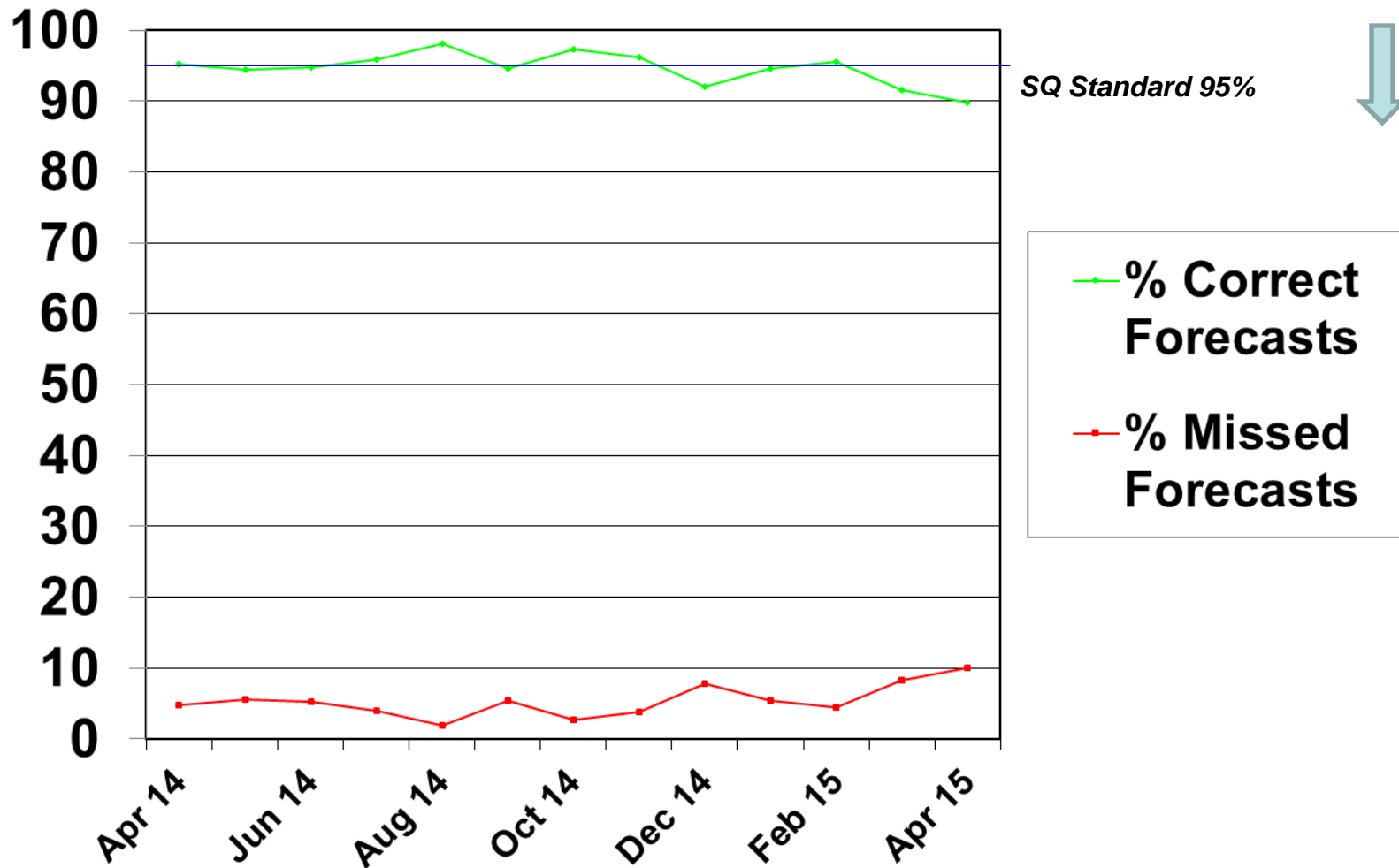
## All Combined



- Very challenging month with low ceilings/visibility and thunderstorms
- Overall just under **90%** forecast accuracy
- *Use our forecasts early in your planning process--they can prevent wasted time and enhance your overall flight/mission planning*



# Overall MWPVER Trend

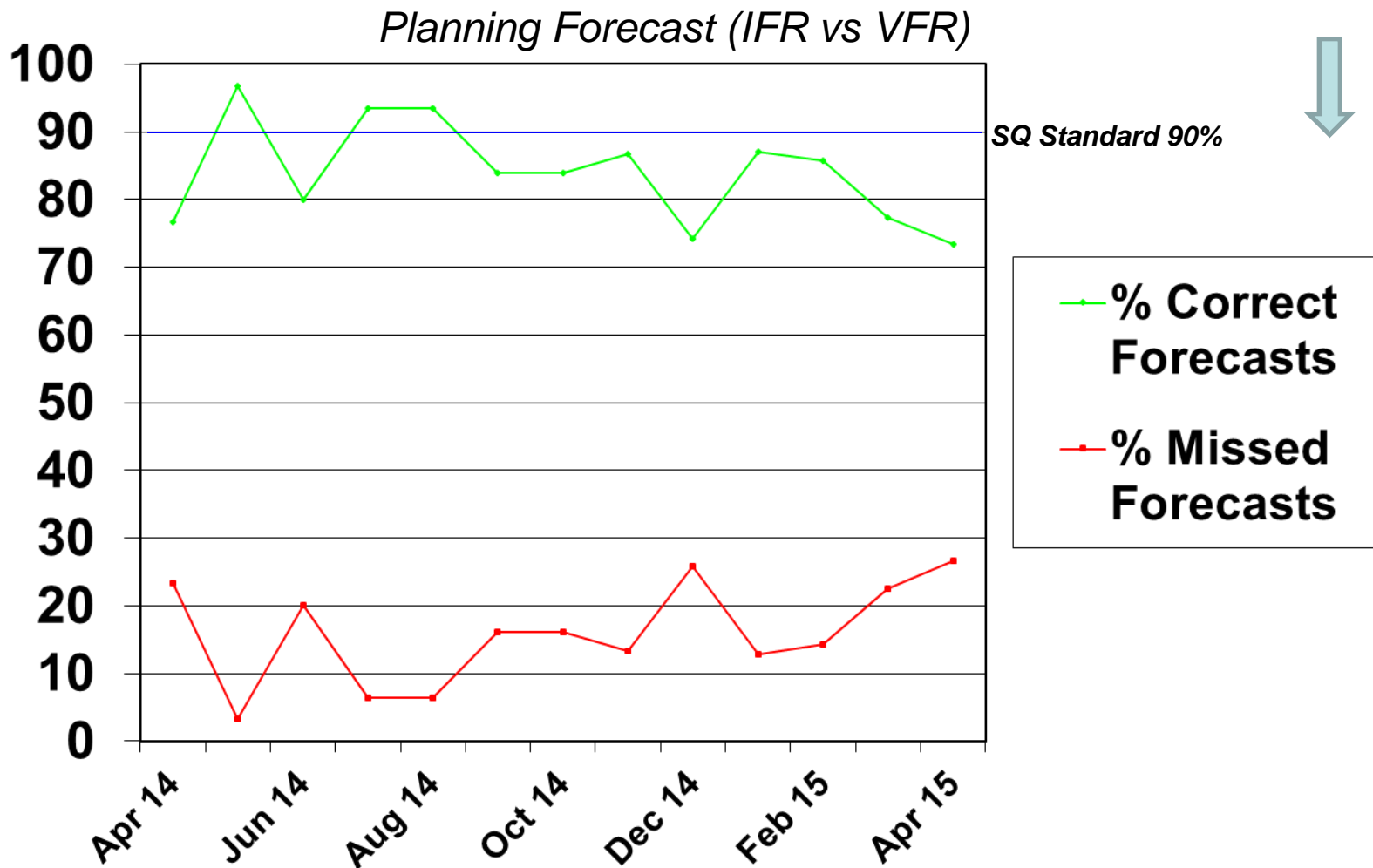






# 00Z MWP

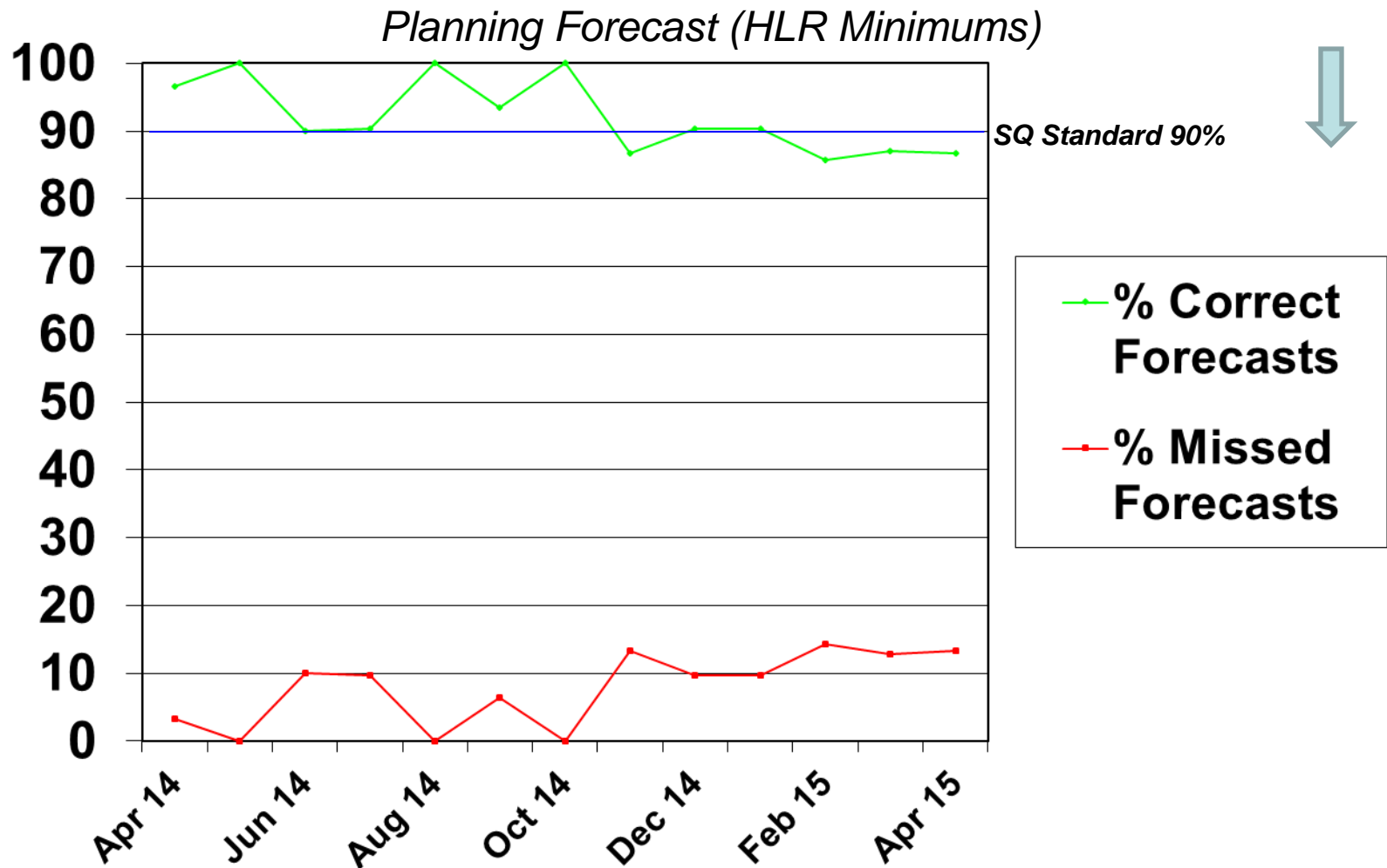
## 12-Hour IFR vs VFR Forecast Trend





# 00Z MWP

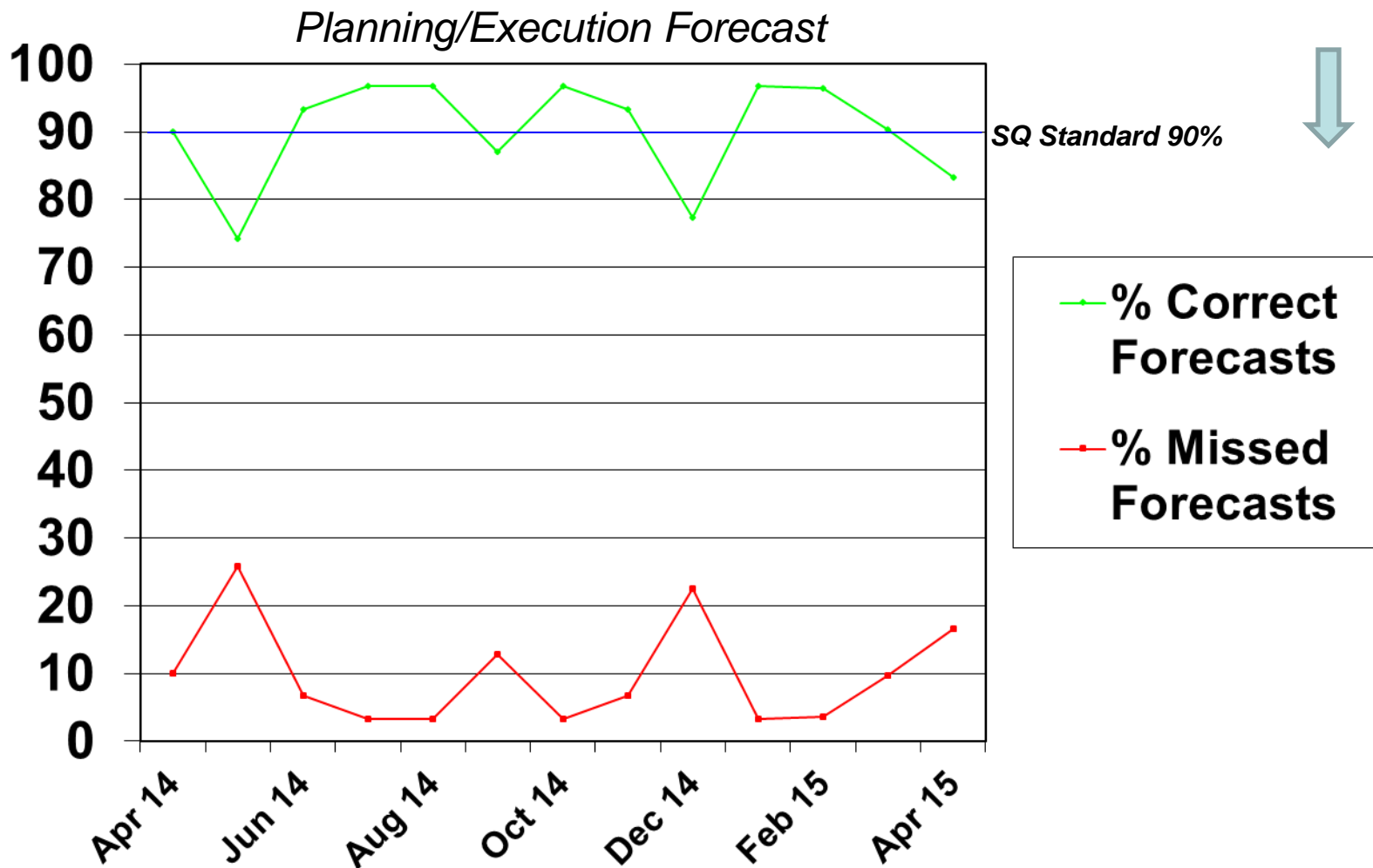
## 12-Hour **500** / ½ Forecast Trend





# 08Z MWP

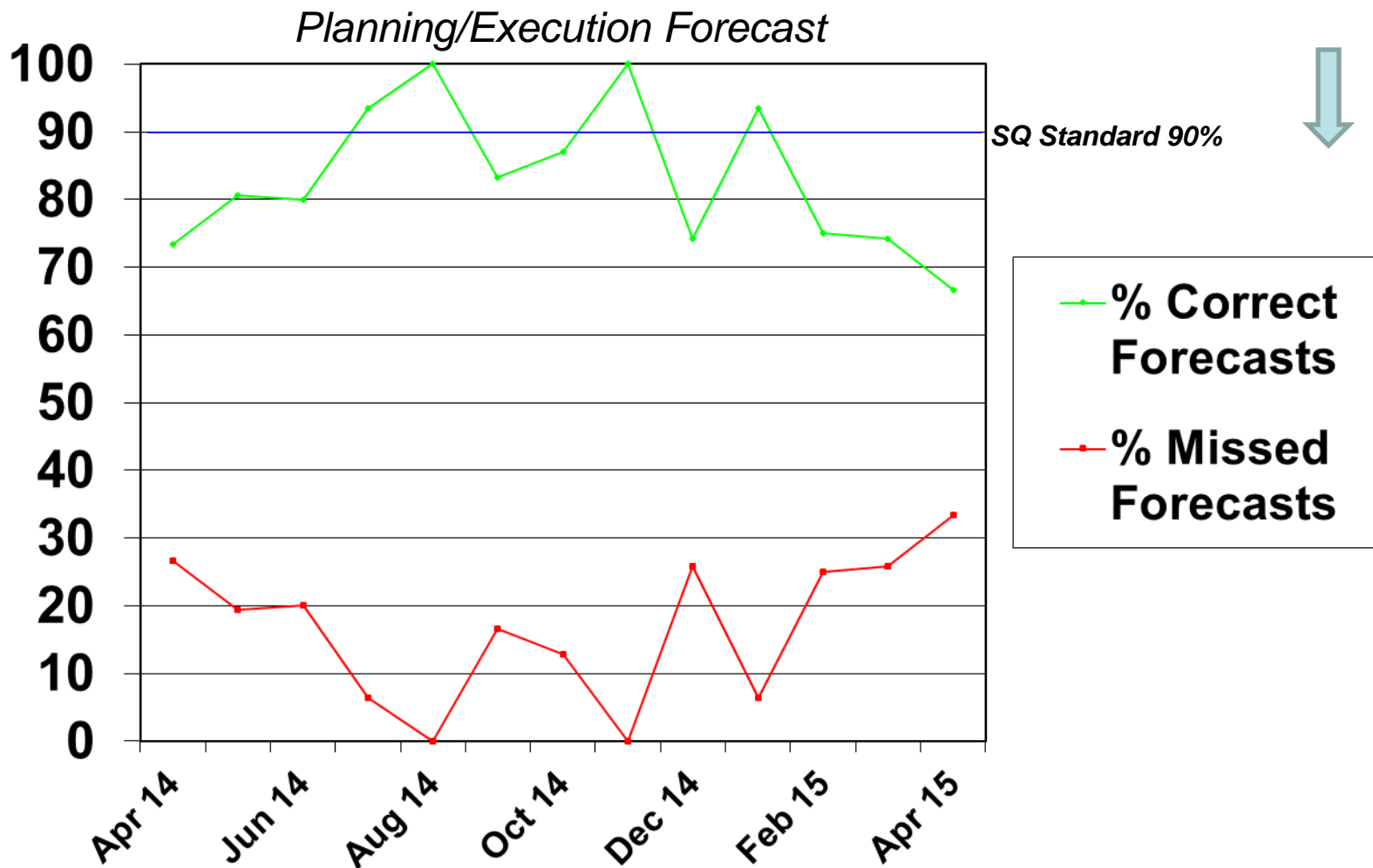
## 3-Hour IFR vs VFR Forecast Trend





# 08Z MWP

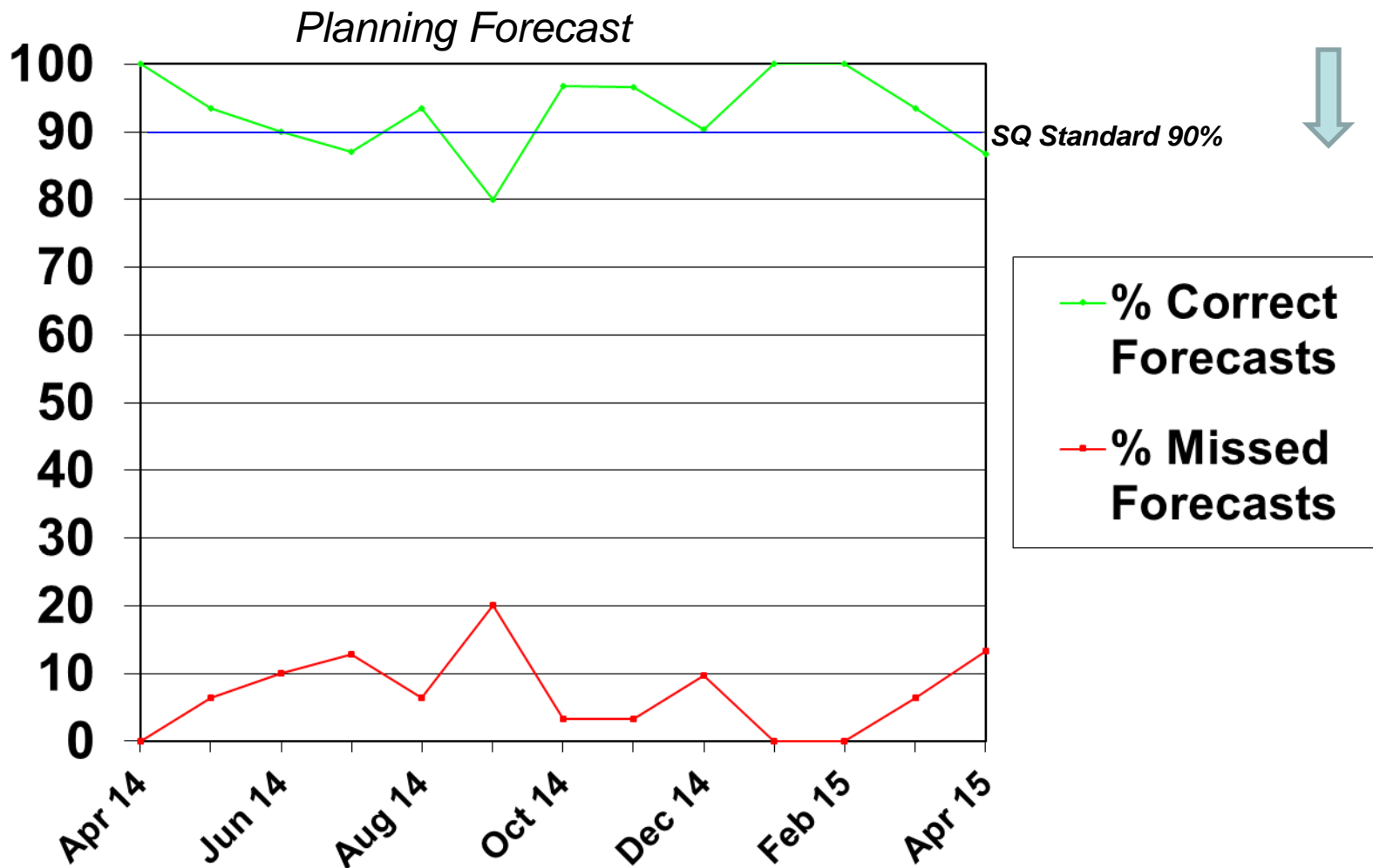
## 6-Hour IFR vs VFR Forecast Trend





# 08Z MWP

## 12-Hour Thunderstorm Forecast Trend



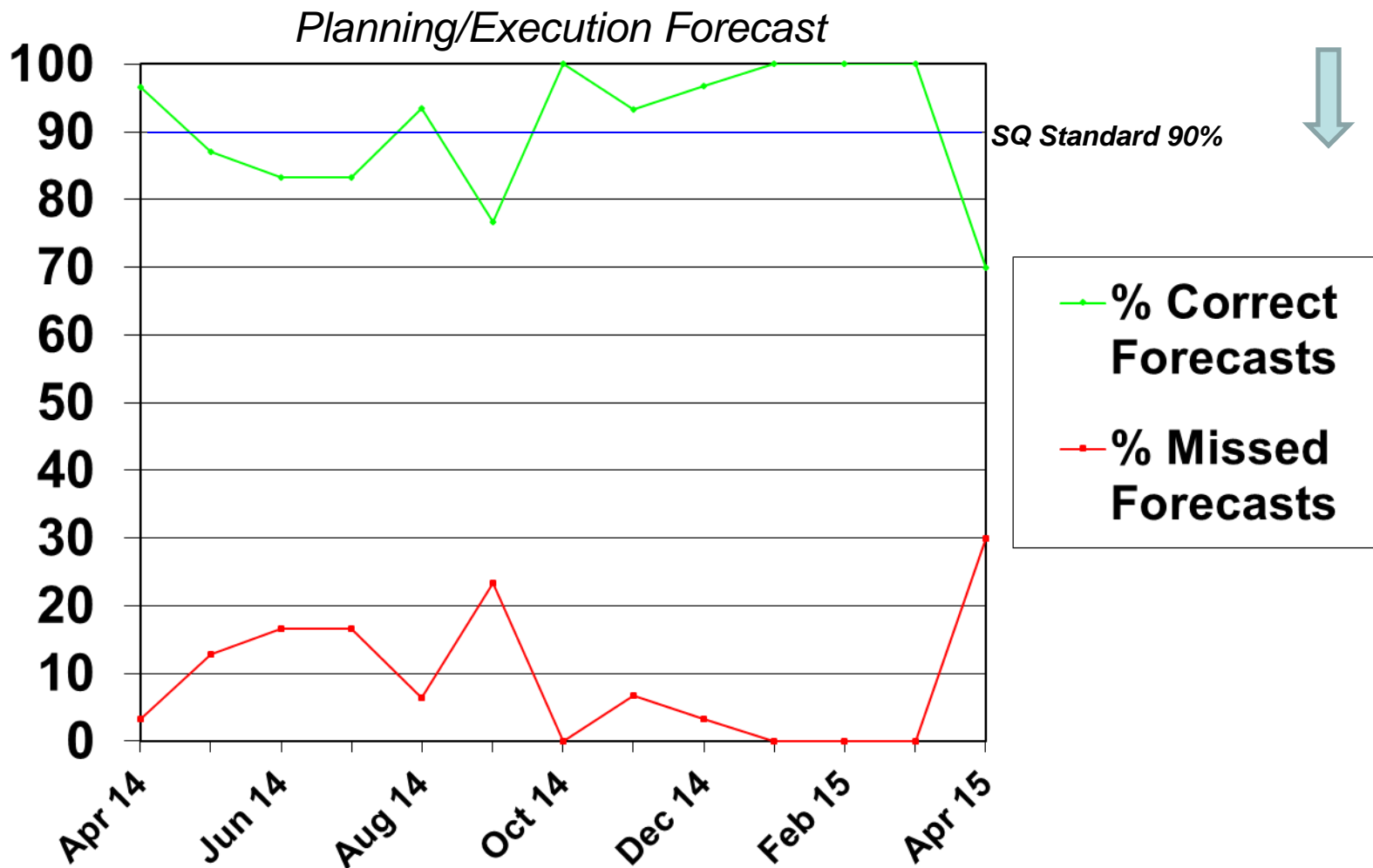
*Integrity - Service - Excellence*





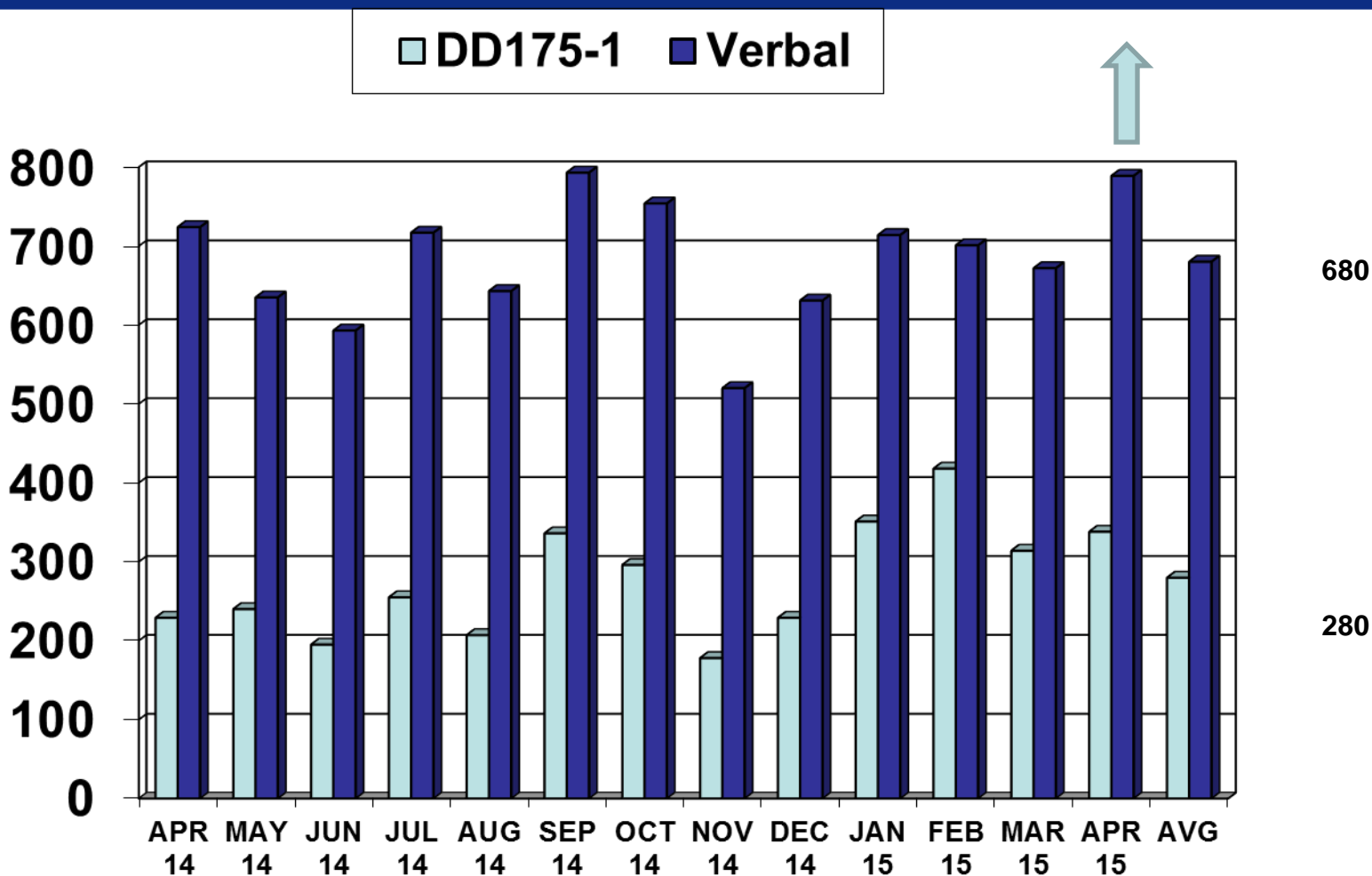
# 16Z MWP

## 6-Hour Thunderstorm Forecast Trend





# Flight/Mission Weather Briefings



**\*\*\*Average ~38 Flight Weather Briefings per day in April 2015\*\*\***

*Integrity - Service - Excellence*



# 26 OWS WARNVER – Fort Hood

## IWWC – April 2015

Criteria	Desired Lead-Time	Lead-Time	Remarks
(1) Moderate (Strong) Thunderstorms	1 hr	N/A	False Alarm
(5) Moderate (Strong) Thunderstorms	1 hr	N/A	False Alarm
(9) Strong Wind (Not associated with Thunderstorms)	1 hr	-0:01	<b>KGRK Peak Wind 36 knots</b>
(9) Moderate (Strong) Thunderstorms	1 hr	N/A	False Alarm
(10) Severe Thunderstorms	1 hr	N/A	False Alarm
(16) Severe Thunderstorms	1 hr	+1:01	<b>No severe reported on Fort Hood, but verified based on Public Hail report KGOP</b>
(17) Severe Thunderstorms	1 hr	N/A	False Alarm
(18) Severe Thunderstorms	1 hr	+2:08	<b>No severe reported on Fort Hood, but verified based on Public Hail report KGOP</b>

### 26 OWS WWA Metrics Query



# 26 OWS WARNVER – Fort Hood

## IWWC – April 2015

Criteria	Desired Lead-Time	Lead-Time	Remarks
(22) Severe Thunderstorms	1 hr	N/A	False Alarm
(23) Severe Thunderstorms	1 hr	<b>+1:06</b>	<b>KGRK Peak Wind 41 knots</b>
(24) Severe Thunderstorms	1 hr	N/A	False Alarm
(27) Strong Wind (Not associated with Thunderstorms)	1 hr	N/A	False Alarm
(27) Severe Thunderstorms	1 hr	<b>+2:36</b>	<b>KGRK Peak Wind 45 knots</b>
(28) Severe Thunderstorms	1 hr	N/A	False Alarm

**26 OWS WWA Metrics Query**



# 26 OWS WARNVER – Fort Hood

## IWWC – April 2015

Does not include extensions...

### WWA SUMMARY

Criteria	# Req	# Issued	# MDLT	# RBNI	Met 50% DLT	QPM	False Alarm Rate
Tornado	0	0	0	0	0	N/A	N/A
Damaging Wind $\geq 45$ kt	0	0	0	0	0	N/A	N/A
Severe Thunderstorm	4	9	4	0	4	100%	56%
Moderate Thunderstorm	1	3	0	1	0	0%	75%
Strong Wind $\geq 35 < 45$ kt	1	2	0	0	0	0%	50%
Freezing Precipitation	0	0	0	0	0	0%	0%
Heavy Rain $\geq 2$ in /12 hr	0	0	0	0	0	0%	100%
TOTALS	6	14	4	1	4	50%	50%

### 26 OWS WWA Metrics Query





# 26 OWS WARNVER – Fort Hood

## IWWC – April 2015

Does not include extensions...

### Lightning Watches

#### (Lightning within 5nm of Fort Hood Reservation)

#### Desired Lead-Time (Advance Notice) = 30 minutes

# Req	# Issued	# MDLT	# RBNI	QPM	False Alarm Rate
14	22	10	0	71%	36%

[26 OWS WWA Metrics Query](#)



# 3 WS WARNVER

## IWWC – April 2015

### Western Training Area (WTA) - Thunderstorm Watches

#### Desired Lead-Time (Advance Notice) = 2 hours

# Req	# Issued	# MDLT	Met 50% DLT	# RBNI	QPM	False Alarm Rate
15	26	7	13*	0	47%	42%

***\*87% of issued WTA Watches had at least an hour lead-time  
This is good, but remember, the customer wants 2 hours minimum***

#### Observed Weather Advisories Issued:

- 18 Surface Wind  $\geq$  25KT
- 3 LLWS



# Questions?

---

**Please contact  
3 WS/DOV  
at  
288-4259/4258  
or E-mail:**

**[usarmy.hood.3-asog.mbx.3w3-woc@mail.mil](mailto:usarmy.hood.3-asog.mbx.3w3-woc@mail.mil)**